UNDERGROUND STORAGE TANKS AND E15 COMPATIBILITY

ISSUE SUMMARY:

E15 Market Growth and Compatibility

Storing and dispensing ethanol blended fuel, such as E15, at gas stations with equipment that is not compatible with higher blends of ethanol fuel can result in leaks and releases. EPA's underground storage tank (UST) regulation requires owners and operators use an "UST system made of or lined with materials that are compatible with the substance stored in the UST system" per 40 CFR § 280.32(a). EPA defines compatible in the UST regulation as "the ability of two or more substances to maintain their respective physical and chemical properties upon contact with one another for the design life of the tank system under conditions likely to be encountered in the UST." Environmentally safe growth of ethanol markets depends in part on our country's currently installed UST infrastructure and the feasibility of upgrades to meet compatibility requirements. Compatibility requirements extend beyond the fuel tank; they include other components of the overall UST system, such as piping, pumps, ancillary equipment, gaskets, and sealants. For this reason, most existing UST systems that do not currently store higher ethanol blends will need some level of upgrade before they can safely and legally store E15. In some cases, upgrades will be relatively minor and lower cost, such as replacing the pumping system; but in other cases, upgrades will be more significant and higher cost, such as replacing single-walled fiberglass tanks.

UPCOMING MILESTONES:

None at this time.

BACKGROUND:

Since 1988, EPA's UST regulation requires fuel to be stored in systems that are compatible with the type of fuel being stored. Limited use of ethanol started in some parts of the United States in the late 1970s, with nationwide ethanol use beginning in the mid-2000s. Decades ago organizations, such as Underwriters Laboratories (UL), first designed and tested some UST system components—such as tanks and piping—to be compatible with E10. But most other UST system equipment—such as pumps, ancillary equipment, gaskets, and sealants—was not tested for compatibility with E15 or higher blends. Increasing the amount of ethanol from 10 percent to 15 percent in fuel can make a significant difference in materials' compatibility with many UST system components over the life of the UST system. Since UST systems are often used for 30 or more years, it takes a long time to turn over the existing EPA infrastructure. However, fully compatible system components are now available for new installations or replacements.

EPA's UST program provides helpful information about E15 and other emerging fuels on our website www.epa.gov/ust/emerging-fuels-and-underground-storage-tanks-usts. We continue to work cooperatively with states, industry, equipment manufacturers, and service providers on research about compatibility, corrosion and degradation concerns, and potential solutions. EPA will also continue our partnership with industry, states, and tribes to facilitate information sharing, guidance, and compliance with E15 compatibility requirements.

KEY EXTERNAL STAKEHOLDERS:

☒ Congress ☒ Industry ☒States ☒ Tribes ☒ Media ☒ Other Federal Agency
☐ NGO ☒ Local Governments ☐ Other (name of stakeholder) _____

Key concern(s):

- E15 can cause incompatible materials and components in UST systems to release petroleum and contaminate soil and groundwater, the source of drinking water for approximately half of the people living in the United States.
- Replacing existing tanks and other equipment in order to safely store E15 could mean potentially high costs for retail facilities, such as gas stations, and other non-retail facilities, such as fleet fueling stations.

MOVING FORWARD:

LEAD OFFICE/REGION: OLEM OTHER KEY OFFICES/REGIONS: OAR, REGIONAL OFFICES